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RAW SEQUENCE LISTING DATE: 09/22/2003
PATENT APPLICATION: US/10/656,053 TIME: 16:58:30

Input Set : N:\Cr3\RULE60\10656053.RAW.txt
Output Set: N:\CRF4\09222003\J656053.raw

SEQUENCE LISTING

3 (1) GENERAL INFORMATION:
5 (i) APPLICANT: Guevera, Jr., Juan G.
6 Hoogeveen, Ron C.
7 Moore, Paul J.
9 (ii) TITLE OF INVENTION: LIPOPROTEINS AS NUCLEIC ACID DELIVERY
10 VECTORS FOR TRANSFECTION OF EUKARYOTIC CELLS
12 (iii) NUMBER OF SEQUENCES: 229
14 (iv) CORRESPONDENCE ADDRESS:
15 (A) ADDRESSEE: Arnold, White & Durkee
16 (B) STREET: P.O. Box 4433
17 (C) CITY: Houston
18 (D) STATE: Texas
19 (E) COUNTRY: USA
20 (F) ZIP: 77210
22 (v) COMPUTER READABLE FORM:
23 (A) MEDIUM TYPE: Floppy disk
24 (B) COMPUTER: IBM PC compatible
25 (C) OPERATING SYSTEM: PC-DOS/MS-DOS
26 (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
28 (vi) CURRENT APPLICATION DATA:
C--> 29 (A) APPLICATION NUMBER: US/10/656,053
C--> 30 (B) FILING DATE: 05-Sep-2003
W--> 36 (C) CLASSIFICATION:
33 (vii) PRIOR APPLICATION DATA:
34 (A) APPLICATION NUMBER: US/09/079,030
35 (B) FILING DATE: 1998-05-14
38 (viii) ATTORNEY/AGENT INFORMATION:
39 (A) NAME: McMillian, Nabeela R.
40 (B) REGISTRATION NUMBER: P-43,363
41 (C) REFERENCE/DOCKET NUMBER: ARAG:003
43 (ix) TELECOMMUNICATION INFORMATION:
44 (A) TELEPHONE: 512/418-3000
45 (B) TELEFAX: 512/474-7577
48 (2) INFORMATION FOR SEQ ID NO: 1:
50 (i) SEQUENCE CHARACTERISTICS:
51 (A) LENGTH: 4536 amino acids
52 (B) TYPE: amino acid
53 (C) STRANDEDNESS:
54 (D) TOPOLOGY: linear
56 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
58 Glu Glu Glu Met Leu Glu Asn Val Ser Leu Val Cys Pro Lys Asp Ala
59 1 5 10 15

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```

61  Thr Arg Phe Lys His Leu Arg Lys Tyr Thr Tyr Asn Tyr Glu Ala Glu
62              20                25                30
64  Ser Ser Ser Gly Val Pro Gly Thr Ala Asp Ser Arg Ser Ala Thr Arg
65              35                40                45
67  Ile Asn Cys Lys Val Glu Leu Glu Val Pro Gln Leu Cys Ser Phe Ile
68              50                55                60
70  Leu Lys Thr Ser Gln Cys Thr Leu Lys Glu Val Tyr Gly Phe Asn Pro
71              65                70                75                80
73  Glu Gly Lys Ala Leu Lys Lys Thr Lys Asn Ser Glu Glu Phe Ala
74              85                90                95
76  Ala Ala Met Ser Arg Tyr Glu Leu Lys Leu Ala Ile Pro Glu Gly Lys
77              100               105               110
79  Gln Val Phe Leu Tyr Pro Glu Lys Asp Glu Pro Thr Tyr Ile Leu Asn
80              115               120               125
82  Ile Lys Arg Gly Ile Ile Ser Ala Leu Leu Val Pro Pro Glu Thr Glu
83              130               135               140
85  Glu Ala Lys Gln Val Leu Phe Leu Asp Thr Val Tyr Gly Asn Cys Ser
86              145               150               155               160
88  Thr His Phe Thr Val Lys Thr Arg Lys Gly Asn Val Ala Thr Glu Ile
89              165               170               175
91  Ser Thr Glu Arg Asp Leu Gly Gln Cys Asp Arg Phe Lys Pro Ile Arg
92              180               185               190
94  Thr Gly Ile Ser Pro Leu Ala Leu Ile Lys Gly Met Thr Arg Pro Leu
95              195               200               205
97  Ser Thr Leu Ile Ser Ser Ser Gln Ser Cys Gln Tyr Thr Leu Asp Ala
98              210               215               220
100 Lys Arg Lys His Val Ala Glu Ala Ile Cys Lys Glu Gln His Leu Phe
101              225               230               235               240
103 Leu Pro Phe Ser Tyr Asn Asn Lys Tyr Gly Met Val Ala Gln Val Thr
104              245               250               255
106 Gln Thr Leu Lys Leu Glu Asp Thr Pro Lys Ile Asn Ser Arg Phe Phe
107              260               265               270
109 Gly Glu Gly Thr Lys Lys Met Gly Leu Ala Phe Glu Ser Thr Lys Ser
110              275               280               285
112 Thr Ser Pro Pro Lys Gln Ala Glu Ala Val Leu Lys Thr Leu Gln Glu
113              290               295               300
115 Leu Lys Lys Leu Thr Ile Ser Glu Gln Asn Ile Gln Arg Ala Asn Leu
116              305               310               315               320
118 Phe Asn Lys Leu Val Thr Glu Leu Arg Gly Leu Ser Asp Glu Ala Val
119              325               330               335
121 Thr Ser Leu Leu Pro Gln Leu Ile Glu Val Ser Ser Pro Ile Thr Leu
122              340               345               350
124 Gln Ala Leu Val Gln Cys Gly Gln Pro Gln Cys Ser Thr His Ile Leu
125              355               360               365
127 Gln Trp Leu Lys Arg Val His Ala Asn Pro Leu Leu Ile Asp Val Val
128              370               375               380
130 Thr Tyr Leu Val Ala Leu Ile Pro Glu Pro Ser Ala Gln Gln Leu Arg
131              385               390               395               400
133 Glu Ile Phe Asn Met Ala Arg Asp Gln Arg Ser Arg Ala Thr Leu Tyr

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134					405				410				415
136	Ala	Leu	Ser	His	Ala	Val	Asn	Asn	Tyr	His	Lys	Thr	Gly
137					420				425				430
139	Thr	Gln	Glu	Leu	Leu	Asp	Ile	Ala	Asn	Tyr	Leu	Met	Gln
140					435				440				445
142	Asp	Asp	Cys	Thr	Gly	Asp	Glu	Asp	Tyr	Thr	Tyr	Leu	Ile
143					450				455				460
145	Ile	Gly	Asn	Met	Gly	Gln	Thr	Met	Glu	Gln	Leu	Thr	Pro
146					465				470				480
148	Ser	Ser	Ile	Leu	Lys	Cys	Val	Gln	Ser	Thr	Lys	Pro	Ser
149					485				490				495
151	Gln	Lys	Ala	Ala	Ile	Gln	Ala	Leu	Arg	Lys	Met	Glu	Pro
152					500				505				510
154	Asp	Gln	Glu	Val	Leu	Leu	Gln	Thr	Phe	Leu	Asp	Asp	Ala
155					515				520				525
157	Asp	Lys	Arg	Leu	Ala	Ala	Tyr	Leu	Met	Leu	Met	Arg	Ser
158					530				535				540
160	Ala	Asp	Ile	Asn	Lys	Ile	Val	Gln	Ile	Leu	Pro	Trp	Glu
161					545				550				555
163	Gln	Val	Lys	Asn	Phe	Val	Ala	Ser	His	Ile	Ala	Asn	Ile
164					565				570				575
166	Glu	Glu	Leu	Asp	Ile	Gln	Asp	Leu	Lys	Lys	Leu	Val	Lys
167					580				585				590
169	Lys	Glu	Ser	Gln	Leu	Pro	Thr	Val	Met	Asp	Phe	Arg	Lys
170					595				600				605
172	Asn	Tyr	Gln	Leu	Tyr	Lys	Ser	Val	Ser	Leu	Pro	Ser	Leu
173					610				615				620
175	Ser	Ala	Lys	Ile	Glu	Gly	Asn	Leu	Ile	Phe	Asp	Pro	Asn
176					625				630				635
178	Pro	Lys	Glu	Ser	Met	Leu	Lys	Thr	Thr	Leu	Thr	Ala	Phe
179					645				650				655
181	Ser	Ala	Asp	Leu	Ile	Glu	Ile	Gly	Leu	Glu	Gly	Lys	Gly
182					660				665				670
184	Thr	Leu	Glu	Ala	Leu	Phe	Gly	Lys	Gln	Gly	Phe	Phe	Pro
185					675				680				685
187	Asn	Lys	Ala	Leu	Tyr	Trp	Val	Asn	Gly	Gln	Val	Pro	Asp
188					690				695				700
190	Lys	Val	Leu	Val	Asp	His	Phe	Gly	Tyr	Thr	Lys	Asp	Asp
191					705				710				715
193	Gln	Asp	Met	Val	Asn	Gly	Ile	Met	Leu	Ser	Val	Glu	Lys
194					725				730				735
196	Asp	Leu	Lys	Ser	Lys	Glu	Val	Pro	Glu	Ala	Arg	Ala	Tyr
197					740				745				750
199	Leu	Gly	Glu	Leu	Gly	Phe	Ala	Ser	Leu	His	Asp	Leu	Gln
200					755				760				765
202	Gly	Lys	Leu	Leu	Leu	Met	Gly	Ala	Arg	Thr	Leu	Gln	Gly
203					770				775				780
205	Met	Ile	Gly	Glu	Val	Ile	Arg	Lys	Gly	Ser	Lys	Asn	Asp
206					785				790				800

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208   His Tyr Ile Phe Met Glu Asn Ala Phe Glu Leu Pro Thr Gly Ala Gly
209           805           810           815
211   Leu Gln Leu Gln Ile Ser Ser Ser Gly Val Ile Ala Pro Gly Ala Lys
212           820           825           830
214   Ala Gly Val Lys Leu Glu Val Ala Asn Met Gln Ala Glu Leu Val Ala
215           835           840           845
217   Lys Pro Ser Val Ser Val Glu Phe Val Thr Asn Met Gly Ile Ile Ile
218           850           855           860
220   Pro Asp Phe Ala Arg Ser Gly Val Gln Met Asn Thr Asn Phe Phe His
221           865           870           875           880
223   Glu Ser Gly Leu Glu Ala His Val Ala Leu Lys Ala Gly Lys Leu Lys
224           885           890           895
226   Phe Ile Ile Pro Ser Pro Lys Arg Pro Val Lys Leu Leu Ser Gly Gly
227           900           905           910
229   Asn Thr Leu His Leu Val Ser Thr Thr Lys Thr Glu Val Ile Pro Pro
230           915           920           925
232   Leu Ile Glu Asn Arg Gln Ser Trp Ser Val Cys Lys Gln Val Phe Pro
233           930           935           940
235   Gly Leu Asn Tyr Cys Thr Ser Gly Ala Tyr Ser Asn Ala Ser Ser Thr
236           945           950           955           960
238   Asp Ser Ala Ser Tyr Tyr Pro Leu Thr Gly Asp Thr Arg Leu Glu Leu
239           965           970           975
241   Glu Leu Arg Pro Thr Gly Glu Ile Glu Gln Tyr Ser Val Ser Ala Thr
242           980           985           990
244   Tyr Glu Leu Gln Arg Glu Asp Arg Ala Leu Val Asp Thr Leu Lys Phe
245           995           1000           1005
247   Val Thr Gln Ala Glu Gly Ala Lys Gln Thr Glu Ala Thr Met Thr Phe
248           1010           1015           1020
250   Lys Tyr Asn Arg Gln Ser Met Thr Leu Ser Ser Glu Val Gln Ile Pro
251           1025           1030           1035           1040
253   Asp Phe Asp Val Asp Leu Gly Thr Ile Leu Arg Val Asn Asp Glu Ser
254           1045           1050           1055
256   Thr Glu Gly Lys Thr Ser Tyr Arg Leu Thr Leu Asp Ile Gln Asn Lys
257           1060           1065           1070
259   Lys Ile Thr Glu Val Ala Leu Met Gly His Leu Ser Cys Asp Thr Lys
260           1075           1080           1085
262   Glu Glu Arg Lys Ile Lys Gly Val Ile Ser Ile Pro Arg Leu Gln Ala
263           1090           1095           1100
265   Glu Ala Arg Ser Glu Ile Leu Ala His Trp Ser Pro Ala Lys Leu Leu
266           1105           1110           1115           1120
268   Leu Gln Met Asp Ser Ser Ala Thr Ala Tyr Gly Ser Thr Val Ser Lys
269           1125           1130           1135
271   Arg Val Ala Trp His Tyr Asp Glu Glu Lys Ile Glu Phe Glu Trp Asn
272           1140           1145           1150
274   Thr Gly Thr Asn Val Asp Thr Lys Lys Met Thr Ser Asn Phe Pro Val
275           1155           1160           1165
277   Asp Leu Ser Asp Tyr Pro Lys Ser Leu His Met Tyr Ala Asn Arg Leu
278           1170           1175           1180
280   Leu Asp His Arg Val Pro Glu Thr Asp Met Thr Phe Arg His Val Gly

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281	1185	1190	1195	1200
283	Ser Lys Leu Ile Val Ala Met Ser Ser Trp Leu Gln Lys Ala Ser Gly			
284		1205	1210	1215
286	Ser Leu Pro Tyr Thr Gln Thr Leu Gln Asp His Leu Asn Ser Leu Lys			
287		1220	1225	1230
289	Glu Phe Asn Leu Gln Asn Met Gly Leu Pro Asp Phe His Ile Pro Glu			
290		1235	1240	1245
292	Asn Leu Phe Leu Lys Ser Asp Gly Arg Val Lys Tyr Thr Leu Asn Lys			
293		1250	1255	1260
295	Asn Ser Leu Lys Ile Glu Ile Pro Leu Pro Phe Gly Gly Lys Ser Ser			
296		1265	1270	1275
298	Arg Asp Leu Lys Met Leu Glu Thr Val Arg Thr Pro Ala Leu His Phe			
299		1285	1290	1295
301	Lys Ser Val Gly Phe His Leu Pro Ser Arg Glu Phe Gln Val Pro Thr			
302		1300	1305	1310
304	Phe Thr Ile Pro Lys Leu Tyr Gln Leu Gln Val Pro Leu Leu Gly Val			
305		1315	1320	1325
307	Leu Asp Leu Ser Thr Asn Val Tyr Ser Asn Leu Tyr Asn Trp Ser Ala			
308		1330	1335	1340
310	Ser Tyr Ser Gly Gly Asn Thr Ser Thr Asp His Phe Ser Leu Arg Ala			
311		1345	1350	1355
313	Arg Tyr His Met Lys Ala Asp Ser Val Val Asp Leu Leu Ser Tyr Asn			
314		1365	1370	1375
316	Val Gln Gly Ser Gly Glu Thr Thr Tyr Asp His Lys Asn Thr Phe Thr			
317		1380	1385	1390
319	Leu Ser Cys Asp Gly Ser Leu Arg His Lys Phe Leu Asp Ser Asn Ile			
320		1395	1400	1405
322	Lys Phe Ser His Val Glu Lys Leu Gly Asn Asn Pro Val Ser Lys Gly			
323		1410	1415	1420
325	Leu Leu Ile Phe Asp Ala Ser Ser Ser Trp Gly Pro Gln Met Ser Ala			
326		1425	1430	1435
328	Ser Val His Leu Asp Ser Lys Lys Lys Gln His Leu Phe Val Lys Glu			
329		1445	1450	1455
331	Val Lys Ile Asp Gly Gln Phe Arg Val Ser Ser Phe Tyr Ala Lys Gly			
332		1460	1465	1470
334	Thr Tyr Gly Leu Ser Cys Gln Arg Asp Pro Asn Thr Gly Arg Leu Asn			
335		1475	1480	1485
337	Gly Glu Ser Asn Leu Arg Phe Asn Ser Ser Tyr Leu Gln Gly Thr Asn			
338		1490	1495	1500
340	Gln Ile Thr Gly Arg Tyr Glu Asp Gly Thr Leu Ser Leu Thr Ser Thr			
341		1505	1510	1515
343	Ser Asp Leu Gln Ser Gly Ile Ile Lys Asn Thr Ala Ser Leu Lys Tyr			
344		1525	1530	1535
346	Glu Asn Tyr Glu Leu Thr Leu Lys Ser Asp Thr Asn Gly Lys Tyr Lys			
347		1540	1545	1550
349	Asn Phe Ala Thr Ser Asn Lys Met Asp Met Thr Phe Ser Lys Gln Asn			
350		1555	1560	1565
352	Ala Leu Leu Arg Ser Glu Tyr Gln Ala Asp Tyr Glu Ser Leu Arg Phe			
353		1570	1575	1580

RAW SEQUENCE LISTING ERROR SUMMARY

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TIME: 16:58:31

Input Set : N:\Crf3\RULE60\10656053.RAW.txt

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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:2; Xaa Pos.2

Seq#:75; Xaa Pos.2,3,4,5

VERIFICATION SUMMARY

DATE: 09/22/2003

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Input Set : N:\Cr3\RULE60\10656053.RAW.txt

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L:29 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:30 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:36 M:238 W: Alpha Fields not Ordered, Reordered [(C) CLASSIFICATION:] of (1)(vi)
L:921 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:2668 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:75 after pos.:0

STATISTICS SUMMARY

DATE: 09/22/2003

PATENT APPLICATION: US/10/656,053

TIME: 16:58:31

Input Set : N:\Crf3\RULE60\10656053.RAW.txt

Output Set: N:\CRF4\09222003\J656053.raw

Application Serial Number: US/10/656,053

Alpha or Numeric or Xml: Alpha

Application Class:

Application File Date: 09-05-2003

Art Unit: OIPE

Software Application: PatentIN1.0

Total Number of Sequences: 229

Total Nucleotides: 702

Total Amino Acids: 23191

Number of Errors: 0

Number of Warnings: 3

Number of Corrections: 2

MESSAGE SUMMARY

220 C: 2 (Keyword misspelled or invalid format)

341 W: 2 ((46) "n" or "Xaa" used)